COS Systems Inc.
16 Coddington Wharf #2
Newport, RI 02840
T: 617.274.8171

January 31, 2014

Mr. Ted Smith
Chief of Economic Growth and Innovation
Department of Economic Growth and Innovation
444 South Fifth St., Ste. 600
Louisville, KY 40202

RE: COS Systems Response to RFI for Broadband Infrastructure Upgrade and Expansion

Dear Mr. Smith,

COS Systems Inc. is happy to submit our response to your RFI for Broadband Infrastructure Upgrade and Expansion project. While we are unable to deliver a complete network solution for the city, we can deliver powerful software that will help the city identify the business case for network deployment and manage the network once it is deployed. Using our hallmark self-service approach, our products make it easy for businesses and residents of Louisville to demonstrate their support to build your network and once it is built, to get connected and buy compelling services from local service providers on your network.

About COS Systems
COS Systems is a software company and the developer of the COS family of products, specifically built to meet the needs of municipalities who are looking to deploy municipal fiber and wireless networks that support multiple services and providers.

COS Service Zones™ accelerates profitable fiber network deployment by engaging businesses and consumers in areas that network build-outs are being planned, securing their interest and commitment before building. It enables communities to invest in fiber networks with confidence to boost economic development, quality of life, and access to the global economy.
The COS Business Engine and Marketplace (BEM) supports the management of both municipal retail services and the multi provider open access models that many communities are deploying around the world.

COS Systems customers currently manage over 150,000 network subscribers and over 50 municipal and utility owned fiber networks and is used to manage services offered by dozens of local and nationwide service providers.

How COS Systems software can support Louisville's fiber deployment efforts

Our **Service Zones**TM product will enable the city to understand where demand exists within the current business community and among the residential neighborhoods of the city for improving internet access and speed by deploying a gigabit fiber network.

Service Zones will enable Louisville to develop a comprehensive broadband infrastructure that will identify where demand exists for adding faster internet services. Using proven tools, models and best practices, Service Zones TM identifies where to build out your fiber network in a manner that delivers service to those areas that want it most AND can deliver the needed revenue to support the network build-out. By understanding where the most demand exists and the construction costs and revenue that would result from a gigabit network build-out, the Louisville fiber network can be built in areas of highest demand, lowest construction cost and with the best business case first, and then can be expanded upon to serve other areas of Louisville in the future.

Service Zones includes best practices, ideas and recommendations regarding the development of a gigabit fiber network in the form of a checklist of activities that can be performed at each stage of your network deployment.

It identifies the geographic areas where demand for the service will be sufficient to meet the business case needed to start deployment, and by dividing the city into service zones, and delivers a ranking of which areas offer the best business case for network deployment. This will enable the city to finance the build out to other deployment areas by expanding wired and/or wireless broadband service to underserved and disadvantaged residential areas, using the cash flow generated from the initial network deployment areas that are likely to generate excess cash flow from the initial customers that are activated. This will provide important information to the city to evaluate the feasibility of network expansion into other areas of the city, including the necessary steps, best practices and the financials required to develop a more expansive network.

Service Zones also provides a powerful way to rally support for your network build-out. Each service zone of your network can identify and recruit sponsors who are supporting the network deployment. By acknowledging the leaders and supporters of the network build-out in various zones of the city, business and community leaders can demonstrate their initiatives to deploy the network in areas that will deliver value to their constituents, such as employees, students, housing developments and business parks.

Service Zones enables you to engage your supporters and demonstrate their support for the build out of the network in one or more areas of the city. By leveraging the Sponsor capabilities of Service Zones, the city can engage the following communities to deliver both financial and other support for your network deployment:

- Institutions of Higher Education
- Health Care Facilities
- Non-City Government Agencies
- Businesses
- Commercial Real Estate Owners/Developers
- Multiple Dwelling Unit Owners/Developers
- Financial Institutions

Service Zones offers network supporters prominent recognition on the zone website that is used to identify interest, demonstrate progress and track the status of each proposed zone of your network. Supporters can promote the network on their websites, through social media, by signage and events. Because Service Zones automatically creates and manages websites for the network and each zone being surveyed for deployment, supporters can simply refer them to the Service Zone managed website for the network or zone(s) they are promoting to be served by the network.

More information about **Service Zones**™ is provided in the Product Overview attached to this response.

The **COS Business Engine and Marketplace** ™ **(BEM)** supports the ability for multiple service providers to make use of a shared fiber network to offer access to the provider's services, ranging from internet and telephone services to entertainment and secure online health care delivery services.

The Marketplace promotes competition and multiple service providers resulting in cost-effective internet access for residents (e.g., remote workers, home-based enterprises) and businesses by giving cities and residents the ability to choose from multiple providers and service offerings, often with a range of network access speeds and prices to meet different service needs.

Many communities that deploy open access networks to encourage competition and transparency in the internet services available in their community. It promotes local service providers to develop businesses and services that are tailored to meet the needs of the community, acting as an engine to stimulate new products, applications, and services that are developed to meet the specific needs of the community.

By making it easy to offer new services to the residents of the community through an online marketplace BEM makes it easy for technology companies to create, promote and market the next-generation of products and services on the Louisville fiber network. This will help stimulate the local economy by promoting new product, application, and service development that leverages the gigabit network that will serve the city.

Our BEM software could be deployed and managed by your existing Utilities department to offer services from a number of competing providers typical of how electricity and gas are sold in many community owned utilities.

Our Marketplace platform supports the ability to define special classes of services that are available only to members of specific communities (i.e. students, retirees, faculty, members of a specific organization, nonprofits, anchor institutions or groups that are entitled to receive discounted internet service).

It enables different prices and service offerings in different neighborhoods (free wireless downtown, in economically disadvantaged neighborhoods and at the airport), paid fiber or wireless internet access in other areas of the city offering different providers and speeds in residential neighborhoods and business areas. This capability enables the city to promote economic development by offering high speed, low cost fiber internet services to businesses and residents in areas targeted for economic development, while offering non-discounted rates elsewhere in the city.

More information about the **COS Business Engine and Marketplace** ™ is provided in the Product Overview attached to this response.

Thank you for considering COS Systems. Our goal is to be the platform you can count on to make important business decisions about when and where to deploy network resources and where your network subscribers and service providers conduct business that delivers revenue for your network.

We look forward to working with the City of Louisville and the opportunity to partner with the companies you are considering for the design, construction and operations of your network. Please contact me if you have any questions concerning this response.

Sincerely,

Ronald Corriveau
General Manager, COS Systems Inc.
ron.corriveau@cossystems.com
Mobile: 508.868.9717

Attachments:

COS Systems Service Zones Product Overview
COS Systems Business Engine and Marketplace Product Overview

Confidentiality Statement

The undersigned, on behalf of COS Systems Incorporated ("**Respondent**"), executes this Confidentiality Statement ("**Statement**") as of the 31 day of January, 2014.

Background:

Respondent is considering whether to respond to the Request for Information ("**RFI**") issued by Louisville/Jefferson County Metro Government ("**LMG**"), regarding the construction and operation of a broadband network. In order to assist Respondent in its preparation of its response to the RFI, LMG will provide Respondent with certain non-public information ("**Confidential Information**") about the city's infrastructure. The Confidential Information includes but is not limited to, a map or maps of Louisville, showing existing lit and dark fiber, water and sewer openings, underground freight tunnels, and other sub-surface infrastructure of the city that, for security and safety reasons, is not publicly available.

LMG considers some or all of the Confidential Information to be exempt from disclosure pursuant to the Kentucky Open Records Act and/or other laws or regulations relating to critical infrastructure information. However, in the interest of cooperating with Respondent and its exploration of possibilities relating to the RFI, LMG is providing the Confidential Information with the understanding that it will be used only for the purpose of responding to the RFI, and will under no circumstances be distributed publically without the express written permission of LMG.

Respondent understands that in discussing and providing Confidential Information to Respondent, LMG does not waive any exemption(s) or privilege(s) from disclosure that it otherwise possesses under the Kentucky Open Records Act, or under any other state or federal law or regulation.

In recognition of the benefits to Respondent of receiving Confidential Information from LMG, Respondent will undertake the following obligations with respect to the Confidential Information:

Respondent's Obligations:

1. Respondent will maintain the confidentiality of the Confidential Information whether transmitted in writing, verbally, or electronically.
2. Respondent will only have a duty to protect Confidential Information if it is disclosed in a manner in which Metro Government reasonably communicated, or Respondent should reasonably have understood under the circumstances, that the disclosure should be treated as confidential, whether or not the specific designation "confidential" or any similar designation is used.
3. Respondent may use Confidential Information only for the purpose of responding to the RFI. Respondent will use a reasonable degree of care to protect the Confidential Information and to prevent any unauthorized use or disclosure of Confidential Information. Respondent may share the Confidential Information with its employees, directors, agents or third party contractors who need to know it and if they have agreed with Respondent in writing to keep the information confidential. Respondent will promptly notify LMG of any unauthorized access to Confidential Information of which Respondent becomes aware.
4. Consistent with applicable Kentucky privacy laws, and subject to the provisions of the Kentucky Open Records Act, Respondent shall: (a) protect all Confidential Information using the same

practices it uses to protect trade secrets, (b) notify LMG immediately upon receipt of a request if Respondent believes a response to a request requires the disclosure of Confidential Information and (c) immediately provide LMG with a copy of any request by a third party seeking inspection and copies of such Confidential Information from Respondent. Respondent may disclose Confidential Information by subpoena or otherwise when compelled to do so by law if it provides reasonable prior notice to LMG unless a court orders that LMG not be given notice. However, LMG may oppose release at LMG's expense. Respondent must provide assistance to LMG in opposing the subpoena or request.

5. Confidential Information does not include information that (a) was known to Respondent without restriction before receipt from Metro Government; (b) is publicly available through no fault of Respondent; (c) is rightfully received by Respondent from a third party without a duty of confidentiality; or (d) is independently developed by Respondent.

6. Respondent will make copies of the confidential Information only as reasonably necessary for Respondent to engage in the purpose of responding to the RFI. Because Confidential Information is confidential for public safety or security reasons, all copies of such information including the original(s) must be returned to LMG or destroyed when no longer needed for the purpose of responding to the RFI. However, in no event are copies to be retained longer than one year from the date of this Statement unless otherwise permitted by LMG in writing.

7. Respondent understands that LMG is under no obligation to proceed with any business transaction with it.

8. Respondent understands that it does not acquire any intellectual property rights to the Confidential Information except the limited rights necessary to use the Confidential Information for the purpose of responding to the RFI.

9. By accepting the Confidential Information, Respondent understands and acknowledges that the exclusive venue for any dispute relating to it shall be the state courts of Kentucky or the U.S. District Court for the Western District of Kentucky, Louisville Division, and that its obligations with respect to the Confidential Information will be governed by the laws of the State of Kentucky, including its conflict-of-laws principles.

10. Respondent represents and warrants that its undersigned officer has full authority and capacity to execute this Statement on its behalf.

By:

Name: Ronald Corriveau
Title: General Manager, COS Systems Inc.
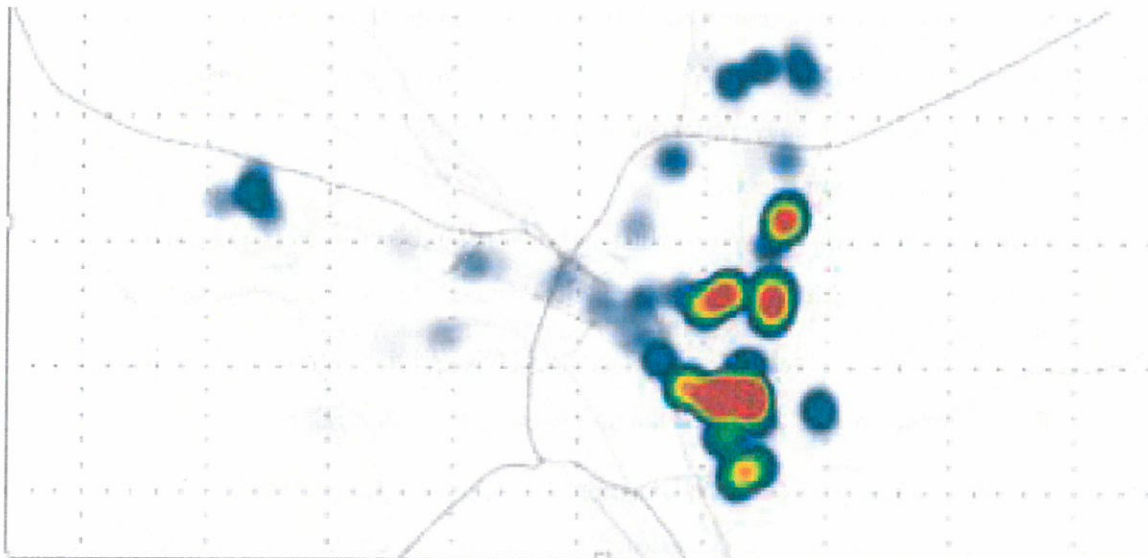
COS Service Zones™

What if ...

    building profitable fiber networks was as easy as looking at a map?

What if...

        every dollar spent was backed by customer commitments?

        you knew exactly where to dig and where to deploy first for optimal ROI?

Now you can. COS Service Zones™ shows where to build and build first for fastest ROI. Service Zones™ removes the best effort estimates that typically drive network deployments. Instead, backed by customer commitments, you'll know *exactly* where to build, based on:

-     ✓ Actual, real-time customer demand   ✓ Construction costs and realities

Simply circle an area on a map, and Service Zones™ equips you with a GIS-based plan that's easy to explain, to market strategically and to deploy profitably.

The COS Service Zones™, complemented by the COS suite of software, revolutionizes next-generation network profitability.

Watch your deployment generate cash flow and delight your investors

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[Service Zones Overview ™]   Page 1

What kills network deployment ROI today? Assumptions

Until now, building out modern fiber and wireless networks required investing in expensive consultants, subpar data and vague industry benchmarks, rather than actual real-time customer data. Until now, data-gathering has been difficult, time-consuming – and difficult to present to decision-makers, especially when weighing multiple prospective service areas or communities. Often politics drives build-outs, rather than the realities of cash flow and investment returns, much to investors' peril.

Before building, you need to know:

- ✓ Where you have the greatest demand for your services
- ✓ Which services do prospective customers seek? How many want multiple services?
- ✓ Which customers want premium services, such as GB speeds? Where are they located?
- ✓ What are the fiber deployment, construction and make-ready costs?
- ✓ Where to break ground for optimal ROI?
- ✓ How to communicate with prospective customers on network build-out progress and plans?

This real-time customer demand data determines a network deployment's financial viability. Until now, postcards and labor-intensive phone surveys were the only way to collect such data. Static data and assumption-based financing yield risky ventures. Don't guess your take rates. Don't bank on benchmarks.

Know your customers' intent – even before investment or digging starts.

Real-time demand data yields profitable, operating networks

You don't have to be Google to build the world's fastest fiber network. You can drive profitable deployment with of fiber using the same kind of advanced tools used by the world's most profitable and affordable networks. You need a set of tools that easily lets you engage the community that will be using your planned network and lets you organize and manage all of the business information that you will need for the construction and management of your network.

COS Service Zones™ supplies real-time customer demand *and* determines which areas, or neighborhoods give you the best return on your network investment. Engage prospective customers using your planned network's Preregistration Portal, with your network's branding, planned services and speed offerings, while making it easy for planned customers to indicate the speeds they need and services they desire. But that's just the beginning.

Real-time, accurate data validates network ROI, cements where to dig first, enables financing, and establishes a deployment plan that *will* achieve network goals and profitability.

Eliminate assumptions and estimates. Determine demand by asking

Where to deploy for fastest ROI? Where is the highest demand? What will build out cost be ? What will ARPU be? How to build out? Start asking prospective subscribers:

- ✓ Are you a commercial or residential customer? What are your needs?

- ✓ How do you feel about your current Service Provider?

- ✓ What kind of services and bundled offerings would you be interested in buying?

By knowing your customers – both commercial and residential – you'll know which services they want. You'll then know which area yields profitability – and which areas to avoid. COS Service Zones™ replaces the guesswork with real-time customer demand data.

Know who your customers are, where they are, and what level of service they desire before you build your network.

Calculate ARPU estimates based on real-time data, not outdated models

The Internet is currently accessed via networks that were planned decades – or more – ago. In that time we've experienced unimaginable shifts, from mobile to cloud and video streaming. Relying on outdated market research and user surveys based on current service levels undermines forecasting data. Instead, network owners and operators should ask the speeds and services today's consumers actually seek.

COS Service Zones™ ensures network providers can

- ✓ Immediately assess user needs and interests
- ✓ Monetize networks via reseller and revenue-sharing agreements
- ✓ Project revenue accurately, based on consumers' and businesses' desires.

Knowing exactly which services consumers seek – before construction begins – revolutionizes ARPU projections for any network area you choose: Deploy first in locations with optimal ROI.

Maximize revenue & minimize CAPEX & OPEX

Today's Gigabit networks are designed to support multiple services and providers and require a powerful software to determine crucial network deployment decisions like:

- ✓ What services will your Customer demand
- ✓ Optimal fiber runs and Construction costs

Know where high-demand customers are and get them on the network at the beginning of the build-out. accelerates network profitability and quickens positive cash flow. Revenue plans, using customer feedback, can drive network build-out decisions, accounting for where to build and how long it will take.

Introducing COS Service Zones™

Service Zones™ eliminates the uncertainty of deploying fiber networks, by eliminating manual processes, using best practices and identifying customer demand. Long before construction begins, Service Zones™ makes it easy to share demand and projected revenue information about a fiber network deployment with network planning personnel, network owners/operators, potential service providers and strategic partners like investors.

With real-time customer demand data, network owners can see on an address-by-address basis where to focus marketing: Rather than blanketing the region with profit-cutting promotions, focus your precious marketing dollars on areas that need nurturing – and avoid wasting funds where the business case targets for fiber deployment are already met.

In concert with the COS suite of network deployment and operations systems, Service Zones™ improves your network's financial viability by:

- ✓ Strategic marketing to pinpointed customers and prospects
- ✓ Recruiting service providers who wish to market their services to customers and prospects
- ✓ Engaging community activists and civic officials who want Gigabit fiber access in their neighborhood.
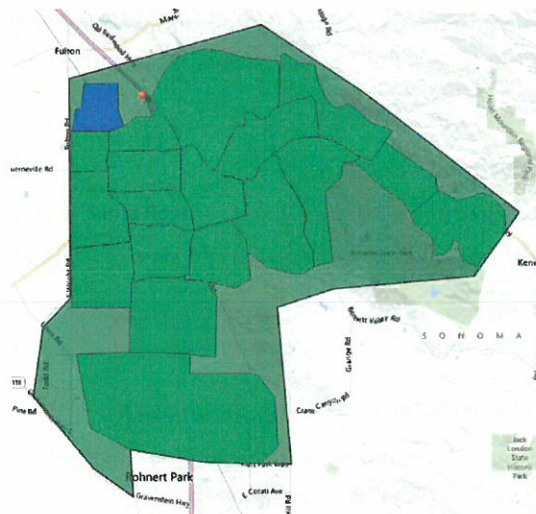
COS Service Zones™ provides the flexibility to look at all of the potential build-out areas in your community or service area. Using a range of planning tools and options to meet the business case requirements, Service Zones™ delivers real-time data on:
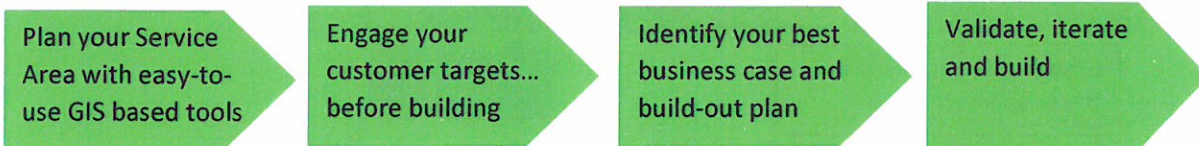
- ✓ Customer interest
- ✓ Future Revenue
- ✓ Infrastructure construction and deployment costs

Real-time analysis of planning, marketing and operations data focuses marketing funds to boost take rate, attract sponsors and foster competition to make each service zone meet or exceed their ROI targets.

The Service Zones Approach

The Service Zones approach to building successful networks uses advanced GIS mapping, data analytics, community and target customer engagement, while managing real-time customer demand information, revenue projections and construction costs in a single integrated system.

| Plan your Service Area with easy-to-use GIS based tools | Engage your customer targets... before building | Identify your best business case and build-out plan | Validate, iterate and build |

Continually validate your business case

COS Service Zones™ clearly shows key elements behind your network business case. Service Zones makes it simple to define your service area and engage your potential subscribers.

Step 1 Outline your service area with planned build-out areas using the Service Zones™ software.

Step 2 Survey property owners, residents and businesses to:

- ✓ Identify which properties want to be connected
- ✓ Understand potential subscribers' desired services and speeds
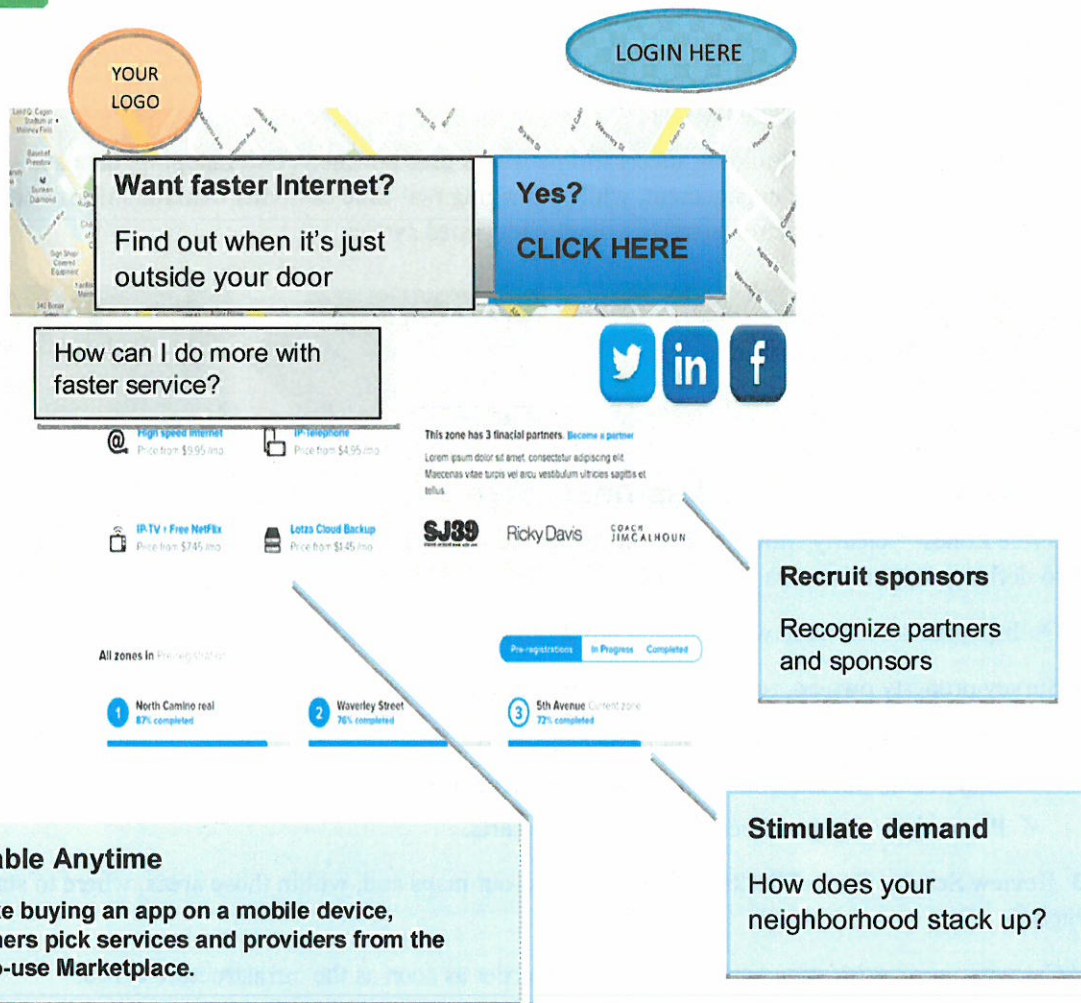- ✓ Pre-register prospects before construction starts.

Step 3 Review Service Zones™'s ROI Rank and build-out maps and, within those areas, where to start construction.

Step 4 Convert a pre-registration contract to a service order as soon as the infrastructure exists.

The COS suite manages subscribers' services, enables deployment ROI, and keeps customers updated.

Keep potential subscribers and sponsors in the loop with a dedicated web site for each Zone in your Service Area

Engage potential customers via your branded subscriber portal that features a map of their neighborhood and where consumers can find out more about the deployment status of fiber in their neighborhood, see some of the services that are being considered for the network and help promote the network to their friend and neighbors. Sponsors can be acknowledged for their contributions and support for getting the network planned and built.

YOUR LOGO

LOGIN HERE

Want faster Internet?

Find out when it's just outside your door

Yes?

CLICK HERE

How can I do more with faster service?

High speed internet
Price from $9.95 /mo

IP-Telephone
Price from $4.95 /mo

IP-TV + Free NetFlix
Price from $7.45 /mo

Lotza Cloud Backup
Price from $1.45 /mo

This zone has 3 finacial partners. Become a partner

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas vitae turpis vel arcu vestibulum ultricies sagittis et tellus.

SJ39   Ricky Davis   COACH JIM CALHOUN

Recruit sponsors

Recognize partners and sponsors

All zones in Pre-registration

Pre-registrations   In Progress   Completed

1 North Camino real
87% completed

2 Waverley Street
76% completed

3 5th Avenue Current zone
72% completed

Available Anytime

Just like buying an app on a mobile device, customers pick services and providers from the easy-to-use Marketplace.

Stimulate demand

How does your neighborhood stack up?

Brand-able websites enable you to engage your community, sponsors and stay in touch with your potential subscribers keeping them informed about:

- ✓ Services offered in their area
- ✓ Build-out plans and updates
- ✓ When they can sign up for a service.
- ✓ Convenient communication options and self-service improves customer satisfaction: Simply go online, select services and register. And network operators save large call center staffing costs. Plus, you can promote your network's brand, supporters and service providers via an easy-to-use web site.
    - ✓ **Service Zones™ makes it easy to stay in touch with potential subscribers.**

Stay on top of demand, with the Zone Analyzer™

On the network owner/operator end, COS Service Zones™ allows network planners, owners and operators to easily see real-time demand data, 24/7 with the Zone Analyzer™.

By surveying your potential subscribers about their Internet service needs, their current service providers and their likeliness to buy your offerings you will in real-time clearly see where more marketing work is needed. While the survey answers are coming in you will also see where demand is sufficient to open up for pre-registrations and intensify marketing work to maximize pre-registration rate.

Convert from abutter to subscriber through targeted marketing and pre-registration on the web site

In the Signup Visualizer™ the network owner can follow signup progress in real-time. Signups are identified on continuously updated maps. Service Zones™ users can see how several potential Service Zones™ stack up: The COS Signup Visualizer™ allows, network owners and planners to drill into key metrics via powerful reports:

- ✓ How close is each service zone to reaching pre-registration targets?
- ✓ As new users register daily, how does each service zone ROI Rank against all deployment options?

Using the advanced reporting tools, network designers, owners and operators can clearly and easily determine which network areas have achieved their preregistration benchmarks, *before* the first hole is dug. The suite also identifies where special offers may boost take rate, with highly targeted segmentation, down to the household level. With Service Zones™, every dollar spent on infrastructure and civil work is backed by customer commitments, ensuring optimal ROI throughout deployment.

Service Zones™ validates revenue projections with signed contracts

Service Zones Deployment Router™ – Powerful planning and network design optimization tools

The Deployment Router™ calculates for each zone, based on pre-registration data – Revenue and shortest fiber length to connect all subscribers. The revenue from contracted subscribers is visually presented on maps, further advice on local deployment order. With access to the shortest possible way to connect all subscribers the basis for a detailed RFQ to construction companies have never been better. Based on your input values for construction cost, the total deployment cost per zone is calculated and can be used as a valuable benchmark when gathering construction quotes.

Powerful analysis using industry best practices – the Service Zones Business Case Validator™

What drives Service Zones™? The COS Business Case Validator™ factors in industry best practices, financial models, tool kits and COS' in-the-field deployment and operations experience. This combined with actual quotes from construction companies, provides a dynamic, real-time tool for when to fire up the bulldozers.

The Validator accounts for:

- ✓ Construction costs based on actual quotations
- ✓ Revenue projections from signed contracts

Service Zones™ enables better, more efficient & profitable networks

With COS Service Zones™, ROI now drives network deployment, based on real-time consumer demand. COS equips network planners, owners and operators with crucial data to clearly and easily determine where to deploy, driven by actual business-case data that ranks network demand, construction costs and easement challenges, right down to Howard Johnson's orange roof.

COS Service Zones™ accelerates profitable network deployments:

Replace traditional assumptions and best-effort estimates with real-time customer demand.

Let ROI drive deployment with up-to-date data, from breaking ground to planting flowers.

Other products in the COS Product Suite

COS BUSINESS ENGINE AND MARKETPLACE ™ (BEM)

The COS Business Engine and Marketplace ™ is a business and operations support system for owners and operators of next generation fiber networks. BEM delivers a secure automated solution enabling service providers to offer IP services such as high-speed internet access, telephone, entertainment and other compelling services to subscribers on modern fiber networks.

The Business Engine and Marketplace lets service providers create and market their services and enables customers to they can shop for select and buy network services delivering a comprehensive solution to automate the operational and business processes critical to sell and deliver services on modern broadband networks. Our self-service interface delivers efficient subscriber management, managing orders, billing information, service agreements, locations and subscriber information.

About COS Systems

COS Systems is the developer of the COS family of products, specifically built to meet the needs of multi provider networks worldwide. COS Systems customers currently manage over 150,000 network subscribers and over 50 municipal and utility owned fiber networks and is used to manage services offered by dozens of local and nationwide service providers. For more information please call 671.274.8171 or visit us at www.cossystems.com.

If only selling internet services were this easy.

It can be, with COS BE!

COS Business Engine and Marketplace™

The premiere management solution for Next Generation Fiber (FTTX) Networks

COS BUSINESS ENGINE AND MARKETPLACE (BEM) is a business and operations support system for owners and operators of next generation FTTX networks. BEM delivers a secure automated solution enabling service providers to offer IP services high-speed internet access, VoIP, IP-TV and VOD services, to subscribers on modern fiber networks without the expense of call centers.

Buying services on fiber networks easy with BEM. Network customers simply plug into an outlet in their home or business and log into their network account that gives them access to the BEM Services Marketplace. From there shopping for network services is at their fingertips using a simple app- store interface. After making service selections, a new network user will have services activated, without dealing with a call center. Our self-service interface delivers efficient subscriber management, tracks orders, billing information, service agreements, locations and subscriber information.

BEM improves ARPU and customer experience by offering a self-service interface and automating processes of their fiber networks. Network owners and operators can cut costs too by accommodating multiple service providers on their network. Service providers can securely manage their own services, pricing, billing terms and customers on the Service Management Portal, without having to deal with expensive web site customization and integration activities. They must simply provide some basic

information about the pricing and terms of their services (such as minimum commitment period, internet speeds or types of services offered). Network owners and operators can quickly and easily add new service providers to their networks by establishing both fixed fee and revenue sharing arrangements.

BEM can be customize by providing specific branding, pricing plans, and offerings tailored for different languages and markets. Integration with existing software is simple and reliable, using the BEM API to create custom solutions.

The COS family of products enable network owners and operators to generate new revenue streams, realize cost savings and offer a multi-provider infrastructure to deliver the highest possible return on their network investments. The COS family of products is designed to manage the *internet of things* and the next generation of network services - today.

The COS Marketplace - available anytime your customers are

The COS Marketplace is ready 24/7 making it easy for customers to say YES. Adding new services like Netflix, Hulu, games and sports can accelerate revenue and improve customer satisfaction.

Partner with new service providers to offer compelling broadband services like technology support and installation, home security and other services that can deliver revenue without adding staff or fixed expenses to your network.
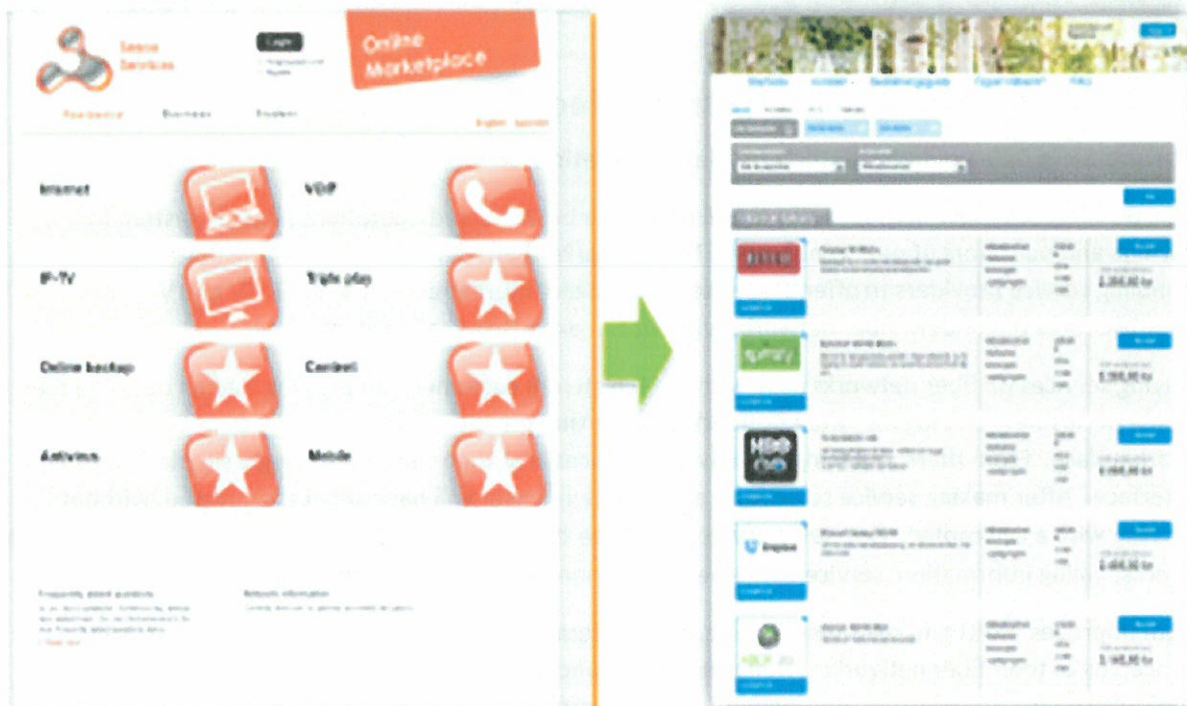
No paper contracts necessary! BEM manages all of your service agreements for both customers and providers.

Bundles, service add-ons or hardware upgrades to your services offerings making it easy for customers to choose only the features and capabilities they need. BEM tracks pricing, order history and terms of service making all contracts transparent

It's Easy to shop for new services

COS simplifies services sales, boosts revenue, and improves customer satisfaction.

Get online. Shop for the services you want. Place your order – Done!

By offering a self-service portal with full control of the ordering process, COS reduces administrative costs and workload for all parties, while delivering happier customers.

Studies done with our customers indicate that over 90% of new service orders are done directly online using our Marketplace and approximately 50% of all orders are placed outside of normal business hours (see figure below).
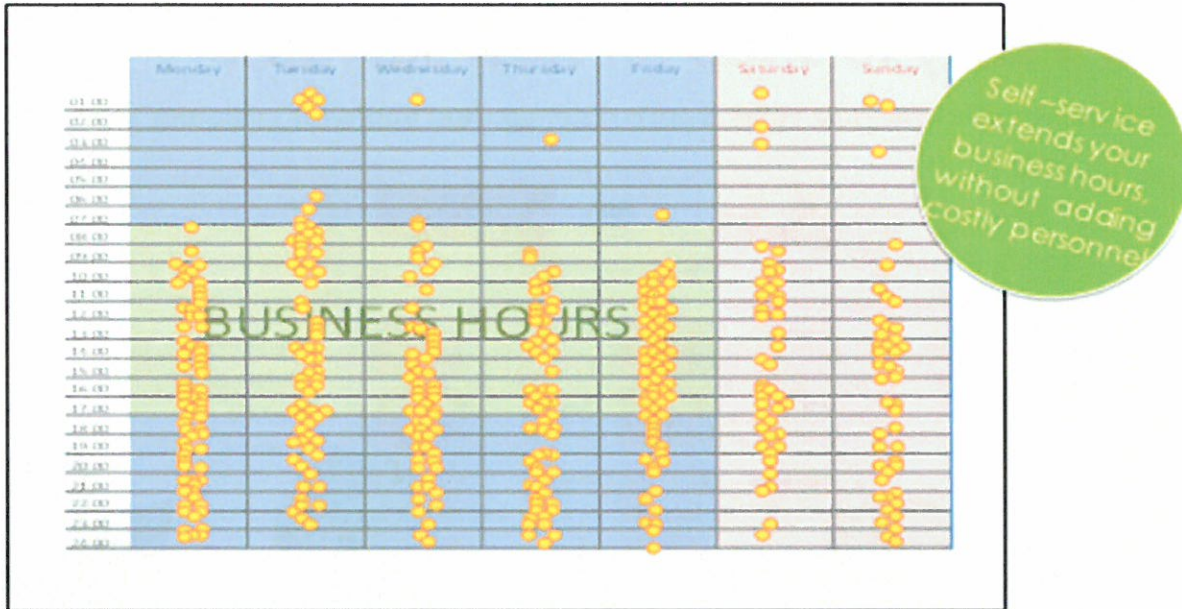

The Marketplace keeps service subscribers updated with information about the status of their orders minimizing the need to call your support center or your service provider partners. Making it easier for your customers to order the services they want minimizes customer frustration, and saves you time and money while maximizing revenue at the lowest possible sales transaction cost, AND delivering services faster than ever! Customers order more services when they have more choices, and can order anytime, increasing your ARPU.

Comprehensive Sales and Marketing Tools - Pinpoint your Promotions

You can maximize your marketing budgets and investments using BEM's innovative Promotions capabilities. Precisely targeting the customers you want to reach with promotional offers delivers increased ARPU and higher take rates, without squandering your marketing budget on customers that are not in your service area or that aren't eligible for your promotional offers. BEM's promotions feature lets you target specific customers by type (students, MDU residents, business users) by selecting specific addresses, neighborhoods, buildings or other areas of your network footprint.

Maximize your marketing budget by targeting specific properties and locations
Precisely targeted cost efficient marketing gives you a higher take rates
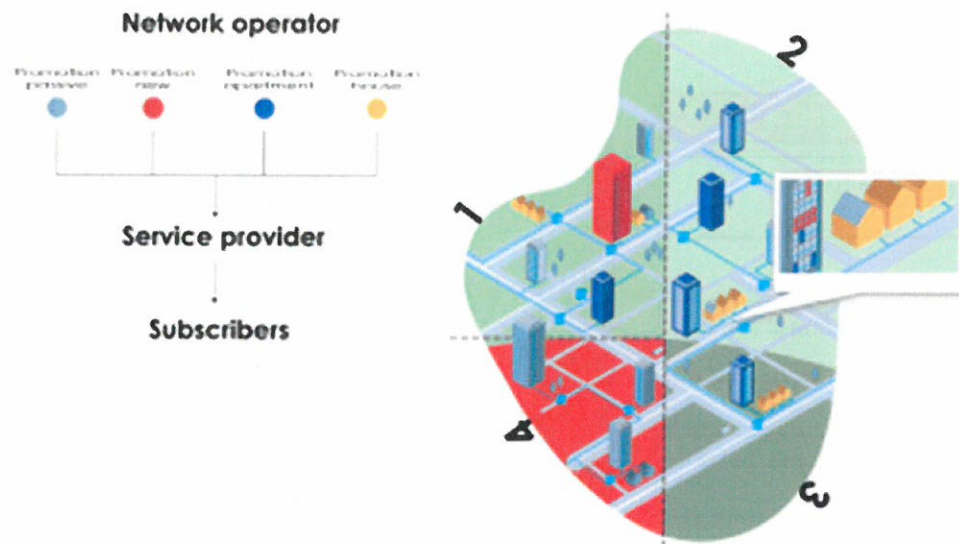
Promotional service offerings and marketing campaigns are created using an easy-to-use wizard that walks you through the process of filtering the type of service locations you want to offer a promotion to and selecting the kinds of services you want to offer along with promotional discounts, bundles or free add-on features.

You can target multiple areas or specific buildings to achieve your network or service take rates. And you don't have to worry about creating angry customers out of people that are not eligible for your specific offers, targeted promotions are only visible to specific prospects and customers you target. And by using multiple marketing channels (email, regular mail, coupons, invitation-only events and signage) you can make sure your targets get your message.

Making sure targeted customers get the correct service offers and pricing

A variety of customer connection conditions can be a challenge for marketing in a fiber network. BEM enables you to offer the right service and connection pricing to your targets by keep track of the connection options for potential service locations.

Connecting customers in MDU buildings may require different paperwork, permissions, work orders and pricing compared to standalone commercial business locations and single family residences. BEM makes it easy to administer the various connection options, lets your customers identify the type of connection they need or want all while making it easy for the customer to order.
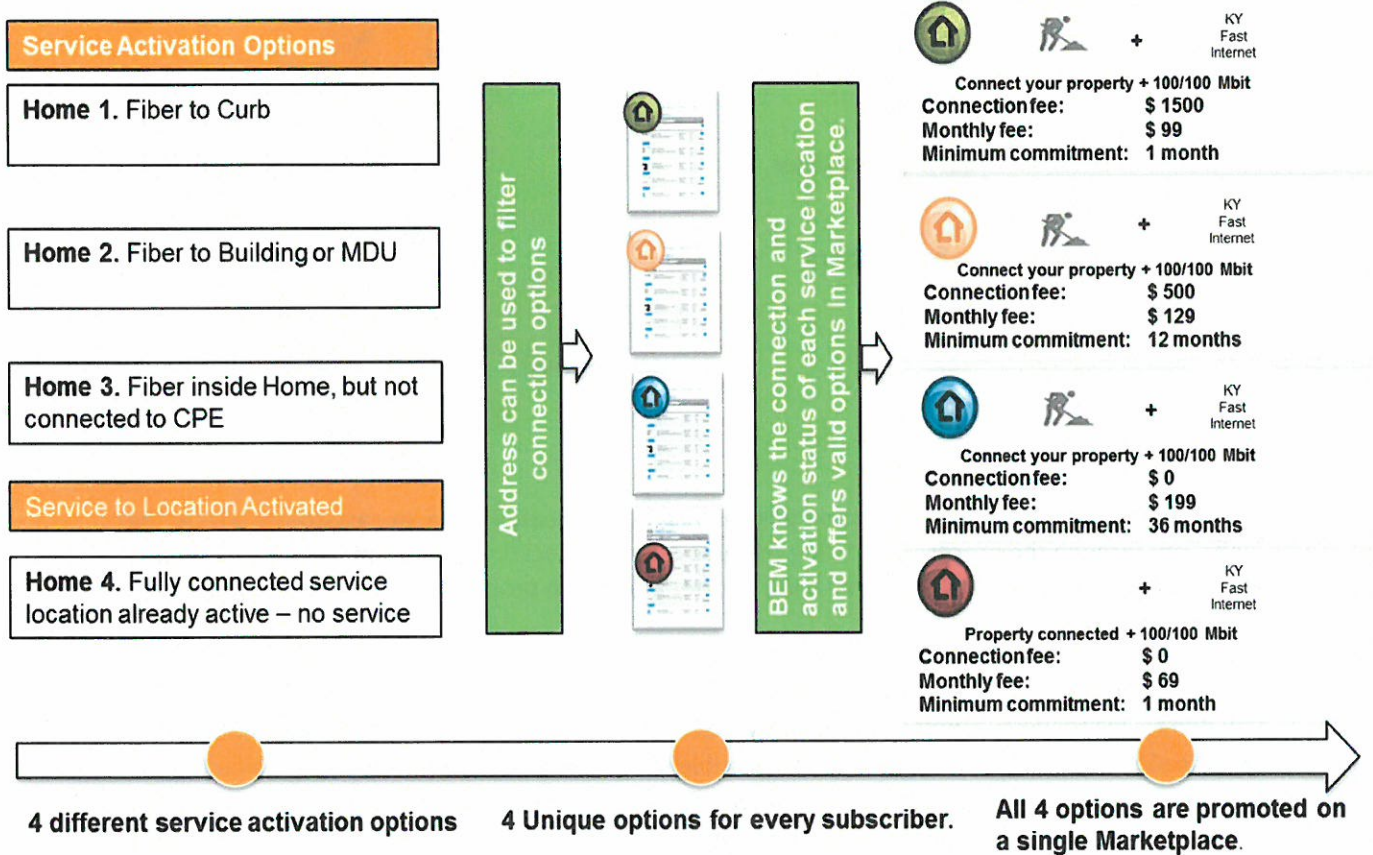
What will it cost and what do I need to order to get connected to the network ?

Support for multiple service activation options makes it easy for subscribers to order services and deploy necessary resources to connect service location to network, and different connection activation options can have different pricing and commitment periods. Give your customers options that make it easy for them to buy a shorter or longer minimum commitment or higher installation fee.

A customer who needs to have conduit run to their home or business (see Home 1 in the figure below) could be charged a higher up-front fee to connect to the network, or require a longer minimum commitment period, while a customer that is already connected to the network (see Home 4) could be offered a no installation fee, no commitment offering.

Service Activation Options

Home 1. Fiber to Curb

Home 2. Fiber to Building or MDU

Home 3. Fiber inside Home, but not connected to CPE

Service to Location Activated

Home 4. Fully connected service location already active – no service

Address can be used to filter connection options

BEM knows the connection and activation status of each service location and offers valid options In Marketplace.

KY Fast Internet
Connect your property + 100/100 Mbit
Connection fee: $ 1500
Monthly fee: $ 99
Minimum commitment: 1 month

KY Fast Internet
Connect your property + 100/100 Mbit
Connection fee: $ 500
Monthly fee: $ 129
Minimum commitment: 12 months

KY Fast Internet
Connect your property + 100/100 Mbit
Connection fee: $ 0
Monthly fee: $ 199
Minimum commitment: 36 months

KY Fast Internet
Property connected + 100/100 Mbit
Connection fee: $ 0
Monthly fee: $ 69
Minimum commitment: 1 month

4 different service activation options   **4 Unique options for every subscriber.**   **All 4 options are promoted on a single Marketplace.**

Homes 1 through 3 in the example above all need to schedule a visit by a service technician in order to complete the connection of the network to the service location and or equipment in the service location. They could be offered different prices based on the cost of the actual installation costs, a discount on installation with a longer minimum service commitment or a one-time fee for installation and service for a period of time (school year, winter ski season, etc.). This approach enables network owner's greater flexibility in setting up pricing plans that will recoup installation fees from up-front payments or through minimum term commitments. And giving customers a choice typically results in improved customer satisfaction, based on feedback from our existing customers.

BEM makes it easy for customers to determine what kind of connection they have or need to connect to the network, minimizing demands on call center staff.

Business Dashboards and Reporting

Getting the right information at the right time to your customer service, support and marketing teams is easy using COS dashboards that quickly identify and communicate the status of network outages or the success of marketing campaigns and promotions. BEM makes it easy to identify business critical information that can be tailored to meet the needs of network operations, finance, sales and marketing teams.

BEM's role-based consoles deliver the right information to the teams that need them, network operations, marketing, finance and service operations. Whether it is fixing a network problem or analyzing the best sales opportunities or execution errors, dashboards deliver the answers you need-fast. Dashboards are designed to present only the information that is pertinent to the role that the operator logged into Dashboard is authorized to see. The Network Owner/Operator Dashboard can see the status of all services, all orders the status of the entire network and overall business being done on the network.

Monitoring of network, services, service provider and promotional activities

1. Displays Network Take Rate as percentage and number of active connections.
2. Displays line chart showing growth/decline in subscribers within network service area over past 12 months
3. Displays the number of orders per Service Type
4. Search field for quickly accessing information.
5. A: Map of service locations in the network, B: Service distribution by provider and service name
6. List of current service messages in the network that is authorized for the console operator
7. Orders Awaiting Activation – shows orders that have not yet been process and identifies what they are waiting for in our workflow process
8. Service Activations by hour of the day to show the 'pulse' of order activity

If sales and marketing teams see a promotion working (or not), they can quickly make decisions to expand or modify their offering to better address customer needs. If customer service knows what's going on in the network, they won't need to call second-level teams to figure it out. The example below show how adding a network disruption notification can identify problems automatically to operations, support and service provider personnel. Move faster by getting the right information to exactly the right people and teams, automatically.

Network information and business data can be presented on role specific dashboards to keep your teams, partners and customers informed, using simple to interpret, charts, graphs and lists of action items that can be used to manage resolution of issues affecting business and network performance. BEM Dashboards give you real-time feedback on your business. The net result: happy customers and a more effective organization that knows what is happening instantly by monitoring an easy to interpret dashboard.

COS Reports - Powerful Reporting that's Easy to Customize

Timely and accurate information, usage statistics and reports are the key to accelerating the pace of your business by enabling, better and faster decision making. Get reports automatically distributed to the right people via email as often as you want, so you can better manage your network, customers, services, service locations, promotional activities and revenue.

Report Name	Report Summary
Customer flow analysis	Details the change in number of active service locations and active subscribers between 2 dates identified in report
Invoice Report	Shows the detailed data from an existing invoice
Service Location and subscription	Shows and overview of service locations and services at each location
Service locations without internet service	Details service locations connected to the network that do not have an active internet service subscription.
Order Coverage and Take Rate	Shows the number of service locations that have at least one service activated showing the total number of service locations, not total number of services.
Orders by Promotions	Shows the distribution of active promotions and promotional activations over a reporting period. (Take rate from all promotions?)
Orders from a specific promotion	Shows the distribution of active customer promotions by activated promotional subscriptions over reporting period.
Promotions available by Service Locations	Details the service locations eligible for a selected promotion. This report can be filtered by group of service locations (i.e. MDU building or neighborhood, or business park) by service or service provider.
Subscriber by Subscriptions list	Delivers a list of subscribers of a specific service

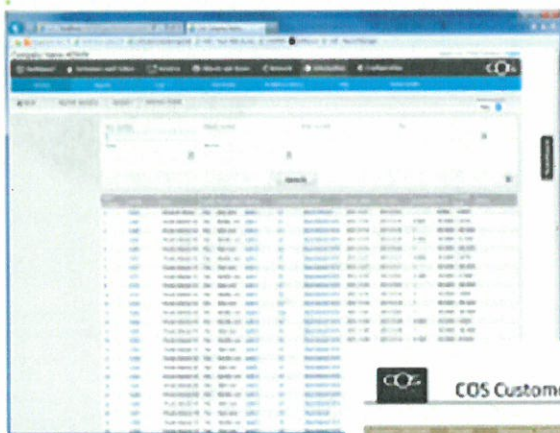# Create reports that combine data and location information
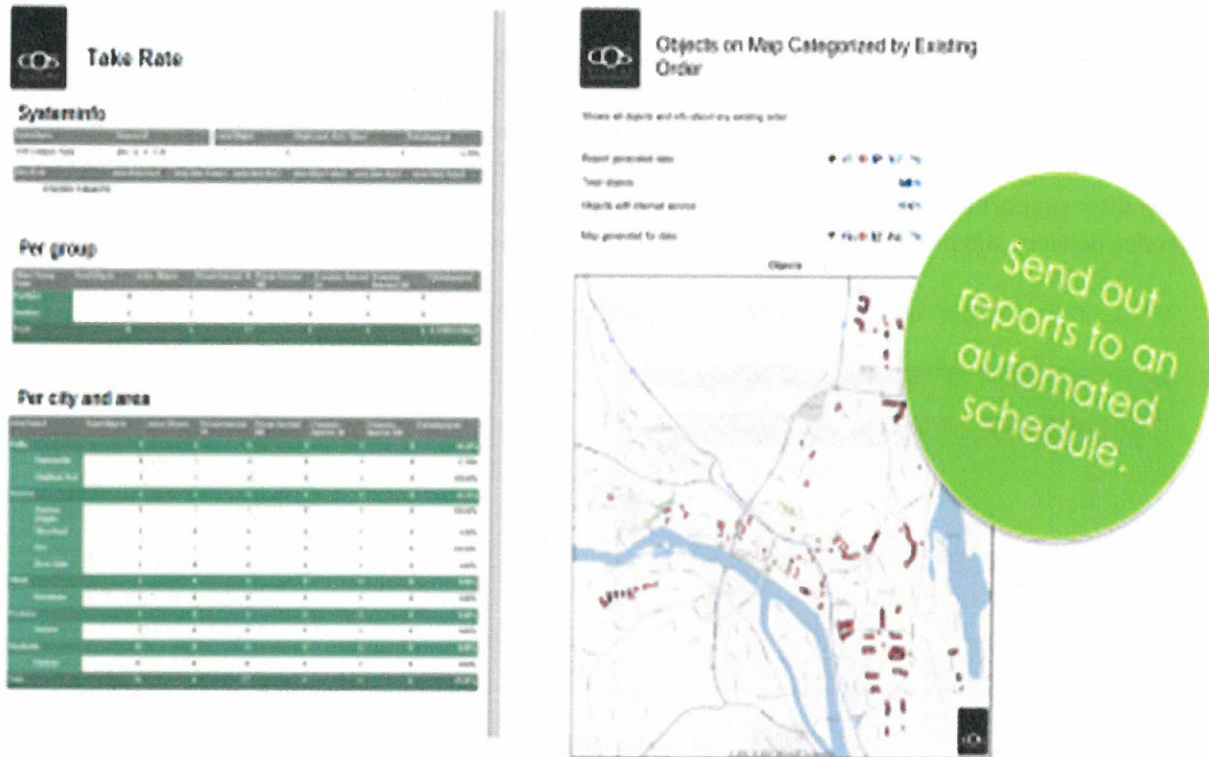
COS Reports can include GIS data provided by Microsoft Bing Maps based on location information that is stored for service locations and managed objects.

Billing

COS BEM delivers powerful sales and marketing tools that enable one of more service providers to offer service through our Marketplace. However service providers and network personnel can also enter and manage orders for services or service network customers that deal with the network call center.

Whether a customer orders online or through a call center to buy and activate a network connection or service, customers must be billed. And this is where BEM shines by being able to support integrations with third party billing and accounting systems, generate wholesale bills to third party service providers and support single bill retails service model that are used in municipal and utility network deployments. BEM offer support for a wide variety of billing services such as billing in advance of service, billing after service delivery and prepaid service billing by day or monthly.

Support for single bill or per provider billing models.

COS Customer Single Invoice Data - Example, 3 customers

Enables Wholesale and Retail Billing.

   Billing data that is associated with orders made through the COS Marketplace or entered by call center staff is sent immediately to the Network Owner/Operator/Service Provider with the order for service, ensuring that all parties involved with service fulfillment know how to contact a customer along with when and where the order was placed and verified. Billing begins immediately when service is activated to the subscriber - accelerating revenue.

BEM tracks multiple revisions of service offerings and the associated terms of service, it simplifies resolution of billing disputes, rebates, accurately managing pricing information for all versions of a service sold over a period of time. Billing data can be exported to common formats for easy administration and integration to third party billing and accounting systems. BEM supports management of internal network services which may be non-billable but need to be tracked by the billing or accounting systems used to manage financial matters and cost allocation.

Service Activation

Using BEM's Workflow capabilities, service activation is supported by a powerful workflow engine that can automate some or all of the service activation process.

The network owner and any service providers involved with fulfilling an order to the customer are contacted to ensure that services are activated, billing information is shared between the parties that are involved with fulfilling the customer order. BEM can manage the entire process of service deliver assurance.

Customers who order services from the COS Marketplace are kept updated on the status of their orders, any delays or rescheduled commitments. Customers like being knowing when their services will be activated and when progress on their connect request or service order is completed.

BEM supports assisted activation and can be integrated with other systems to increase the level of automation. Activation is performed by service technicians using information that is entered and verified by the subscriber, along with detailed provisioning procedure managed by BEM to validate service location, billing information, service selections and other service options. All information is tracked and audited for accuracy.

## Continuous Data Validation is the key to accurate data

The value of keeping your data accurate, up to date and complete across all the business teams that need is critical to an efficiently run network.

In green field network deployments, BEM helps you ensure that the data you need to operate your business efficiently is accurate and up to date from the start of your deployment.

If you are adding on to an existing network, BEM gives you the methodology and processes to clean up documentation errors then cross-check and validate your system information.

COS BEM has over 2000 data validation checks built into our software so common errors don't get INTO your data in the first place, users can't skip entering required data or put invalid data into the system.

Our powerful data validation software and workflow ensures that no shortcuts are used to bypass systems and procedures managed by BEM.

Over 2000 data validations protect your Business from errors
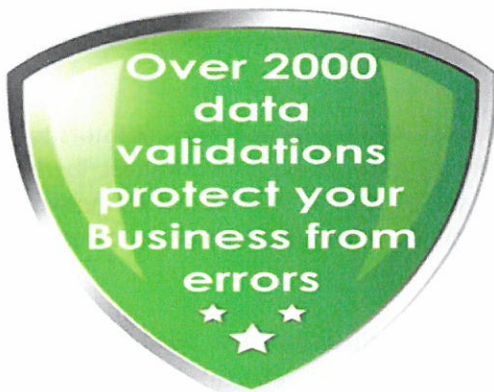
Continuously validated operations in our databases gives you accurate:

- Invoicing data
- Customer data
- Network connections
- Orders/subscriptions
- Addresses and service locations
- Product and service agreements
- Data consistency
- Contract terms
- Audit trail and history

Other products in the COS Product Suite

Service Zones™

COS Service Zones™ accelerates profitable fiber network deployment by engaging businesses and consumers in areas that network build-outs are being planned, securing their interest and commitment before building. It enables communities to invest in fiber networks with confidence to boost economic development, quality of life, and access to the global economy. Service Zones converts real-time demand into investment decisions. With subscriber backing, network owner/operators can deploy where demand exists and use a continually validated business case to drive further deployment, delivering savings on both initial investment and future maintenance costs. By replacing traditional assumptions and best effort estimates with real-time customer demand, Service Zones delivers more profitable networks.

**With subscriber backing, deploy where demand exists
Save on both initial investment & mainteance costs**

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Best zones to start buildout in

Shows density of revenue based on signed customers

About COS Systems

COS Systems is the developer of the COS family of products, specifically built to meet the needs of multi provider networks worldwide.

COS Service Zones™ and Business Engine and Marketplace enables network owners and operators to manage modern fiber networks and do targeted marketing campaigns to attract network subscribers, increase take rates and sell higher ARPU services. It provides a self-service marketplace where network subscribers can select their preferred services anytime, delivering new revenue streams and lowering OPEX costs.

COS Systems customers currently manage over 150,000 network subscribers and over 50 municipal and utility owned fiber networks and is used to manage services offered by dozens of local and nationwide service providers. For more information please call 671.274.8171 or visit us at www.cossystems.com.